

REMARKS

The applicants have carefully considered the Office action dated May 11, 2005 and the references it cites. In view of the following, it is respectfully submitted that all pending claims are in condition for allowance and favorable reconsideration is respectfully requested.

The Office action rejected all pending claims as being unpatentable over Prall, U.S. Patent 6,624,024 in view of Iranmanesh, U.S. Patent 5,514,900. For the reasons explained below, applicants respectfully traverse these rejections.

Independent claim 3 recites forming spacers to isolate and protect a gate area; and forming a gap filling layer over a substrate including the gate area and the spacers, wherein the gap filling layer is formed by depositing undoped polysilicon or amorphous silicon over the gate area and the spacers, and by performing an anisotropic etching of the deposited undoped polysilicon or amorphous silicon. Neither Prall, Iranmanesh, nor their combination teach or suggest such a method.

All of the rejections are based on the Office action's contention that layer 50 of Prall is a gap filling layer. Thus, all of the rejections turn on the meaning of the phrase "gap filling layer." In this regard, it is clear that the Office is attempting to give the term "gap filling layer" its broadest reasonable meaning; as it should during patent examination. However, while the interpretation of the term "gap filling layer" set forth in the Office action is unmistakably broad, it is not reasonable. To elucidate this point, the Office is respectfully reminded that the "fact that claims receive their broadest reasonable meaning during the patent examination process does not relieve the

PTO of its essential task of examining the entire patent disclosure to discern the meaning of claim words and phrases.” Rowe v. Dror, 42 U.S.P.Q.2d 1550, 1555 (Fed. Cir. 1997). Further, “claims are read in light of the disclosure of the specification on which they are based, not in a vacuum.” In re Dean, 130 U.S.P.Q. 107, 110 (C.C.P.A. 1961).

With these principles in mind, we look first to the specification of the pending application to see how the term “gap filling layer” has been used. The gap filling layer 24 of the example illustrated in the application appears in FIGS. 2b-2d of the application. Paragraph [0011] describes the example gap filling layer 24 as follows:

[0011] Referring to Fig. 2b, a filling layer 24 is deposited over the gate areas and the spacers 20. Undoped polysilicon or amorphous silicon is used to form the filling layer 24. *Narrow gaps between the spacers 20 can be easily **filled up** without voids being created because both undoped polysilicon and amorphous silicon have an excellent gap filling characteristics.*

Thus, the applicant’s specification unmistakably describes the gap filling layer 24 as *a layer that fills up a gap*. This is consistent with FIGS. 2b-2d which illustrates the example gap filling layer 24 as substantially filling the gaps between the gate areas 17/19.

The applicant’s specification goes on to state “the undoped polysilicon or the amorphous silicon . . . **fills** the gaps between the spacers 20.” (Specification, paragraph [0012])(emphasis added). The specification also states, “consequently, as shown in Fig. 2d, the gaps between the gate areas are **completely filled with the filling layer 24** without any voids.” (Specification,

paragraph [0013])(emphasis added). Therefore, in applicant's specification, the term "gap filling layer" clearly refers to a layer that at least substantially fills a gap.

In sharp contrast, Prall's layer 50 does not fill any gap whatsoever. While Prall's layer 50 is certainly present within a gap, it cannot fairly be said to even remotely fill a gap. Accordingly, it can be seen that Prall's layer 50 does not fall within a reasonably broad definition of the term "gap filling layer" as used in applicant's specification.

Indeed, the only way one could attempt to construe the term "gap filling layer" to encompass the layer 50 of Prall is to make at least two errors of law, namely, to ignore the usage of the term gap filling layer in the specification (i.e., to improperly read the term gap filling layer in a vacuum), and to drop the term "filling" from the phrase "gap filling layer." The former point is demonstrated by the quotations from applicant's specification quoted above. The latter point can be seen by considering the dictionary definition of "fill." A review of the top three definitions found by searching the term "fill" on the OneLook.com dictionary compilation site reveals that the term "fill" has the following ordinary meaning:

1. *transitive and intransitive verb*
make something full or become full: to make a container full, or become full
• *The bathtub filled rapidly.*
(MSN Encarta)

2. verb 1 make or become full. 2 block up (a hole, gap, etc.).
(Compact Oxford English Dictionary)

1 a : to put into as much as can be
held or conveniently contained <fill a cup
with water>
(Merriam-Webster Online Dictionary)

Thus, it is quite clear that, if the term “filling” is not to be ignored, the term “gap filling layer” must be construed to be a layer that is not only in a gap, but which renders that gap at least substantially full.

With the construction of the term “gap filling layer” complete, it can immediately be seen that the layer 50 in Prall is in no way a gap filling layer. On the contrary, the gap filling layer in Prall is the BPSG layer 52. As can be seen by referencing FIG. 1b, Prall is actually practicing the technique described as prior art in the applicant’s specification, where BPSG layer 22 is used to fill the gaps between the gates.

The Office action acknowledges that Prall does not teach or suggest using undoped polysilicon or amorphous silicon as the alleged gap filling layer 50. However, the Office action argues it would be obvious to substitute undoped polysilicon or amorphous silicon for the alleged gap filling layer 50 of Prall in view of Iranmanesh. Applicants respectfully traverse this statement.

First, as discussed above, the layer 50 of Prall is not a gap filling layer. To the extent the Office is proposing substituting undoped polysilicon or amorphous silicon for the layer 50, one might arrive at a thin layer 50 of undoped polysilicon or amorphous silicon, but there would still be no teaching for removing the BPSG layer 52 from the gap of Prall in favor of a gap filling layer of undoped polysilicon or amorphous silicon. Thus, without hindsight

reference to the applicant's specification, one would still not arrive at the combination recited in claim 3.

Moreover, the undoped polysilicon or amorphous silicon of Iranmanesh is used to form spacers 28A within a via hole. Thus, without reference to the applicant's specification, to the extent one would think to use the undoped polysilicon or amorphous silicon of Iranmanesh in Prall, one might conceivably use it to form the spacers 48, but there is no reasons one would use it for the etch resistant layer 50 in Prall. Indeed, it is far from clear that the layer 50 of Prall would function for its intended purpose were undoped polysilicon or amorphous silicon substituted for the silicon nitride described in Prall. Thus, it is clear that there is no suggestion in either Prall or Iranmanesh for performing the substitution of elements proposed in the rejection of claim 3, and that, even if there were such a suggestion, one would not arrive at the combination of claim 3 by combining Prall and Iranmanesh.

In view of the foregoing, it is respectfully submitted that the rejections of claim 3 and all claims depending therefrom are in error and must be withdrawn.

The rejection of claim 7 is also in error. Claim 7 recites a gap filling layer formed in gaps between the spacers of the gate areas, wherein the gap filling layer is formed of undoped polysilicon or amorphous silicon. As discussed above, neither Prall, Iranmanesh, nor their combination teach or suggest such a gap filling layer. Accordingly, it is respectfully submitted that the rejections of claim 7 and all claims depending therefrom are in error and must be withdrawn.

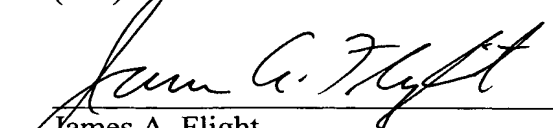
In view of the foregoing, this application is in condition for allowance.

If the Examiner is of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is invited to contact the undersigned at the number identified below.

Respectfully submitted,

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September 12, 2005 By:


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